

SECTION 00110

GENERAL PROJECT REQUIREMENTS

PART 1 - GENERAL

- 1.1 This section describes the general project requirements that are included within the work and must be completed by the Contractor.
- 1.2 The project includes the removal and replacement of various sizes of water main, sectional valves, post indicator valves, and select fire hydrants with new water main, new valves, new hydrants, and lining of existing water mains.

PART 2 - GENERAL PROCEDURE

- 2.1 Contractor shall remove existing valve, or fire hydrant and branch piping (and valve if applicable) and install new valve, or fire hydrant, valve, and branch piping in accordance with the general detail shown on the drawings.
- 2.2 Any and all removals necessary to perform the work including but not limited to pavement, runway, or sidewalk removal and replacement, if needed, shall be included in the bid price and no separate payment will be made by the Air Force. The Contractor shall determine the extent of removals needed based on field observations and the photographs included in the project manual. Also see Section 02510 for other requirements.
- 2.3 All removals shall be replaced with material equal to or superior to that removed whether it be grass, sidewalk, pavement, runway, or other landscaped feature.
- 2.4 Valves and hydrants shall be located generally in the same location as the existing valve or hydrant and as shown on the drawings except when specifically indicated otherwise and as coordinated in the field with the Contracting Officer or designated representative.

PART 3 – VALVE AND HYDRANT IDENTIFICATION AND LOCATING

- 3.1 Each valve and hydrant shall have an identification tag field affixed to the valve box, post indicator, or hydrant.
 - A. The tag shall include the new valve or hydrant number.
- 3.2 The Contractor shall survey the final valve or hydrant location x, y and z (northing, easting, elevation) at the valve box lid or bonnet bolt and furnish this data to the base within the table format shown on the drawings. The coordinate system used shall be that already established by the 55th CES Geobase officer.
- 3.3 Additional valve and hydrant features shall also be tabulated by the Contractor including: model no; pipe depth, diameter, and material; hydrant burial depth; photo nos.; surface cover (i.e. concrete, grass, etc).

PART 4 – VALVE AND HYDRANT PHOTOGRAPHS

- 4.1 Contractor shall photograph the valve or fire hydrant final installation as well as the valve or hydrant before backfill to show the branch piping and cathodic protection system at each valve or hydrant. Provide digital PDF or JPEG files with white board and visible coordinates and valve or hydrant number in the photo. Camera used shall be set at the highest quality setting, and shall be a minimum of 3-mega pixel camera. All photos shall be submitted both electronically on CD or DVD, and hard copies printed in color on 8 1/2" x 11" paper.

PART 5 - WATER MAIN SHUT DOWNS

- 5.1 The Contractor shall close sections of water main and drain as necessary to replace the water main, water valves and fire hydrants.
- 5.2 Water main down time shall be minimized and shall be coordinated with the Contracting Officer or designated representative. Sections of mains shut-down shall be as small as possible; available main line valve locations are shown on the drawings but, no guarantee is made that every valve will close 100%. The Contractor shall include in the bid provisions for shutting down the water main at locations where main line valves are not adequate to shut down flow.
- 5.3 The Contractor shall submit a schedule with a construction sequence indicating planned dates and durations for main closures.
- 5.4 All mains closed and drained shall be chlorinated and sampled in accordance with applicable AWWA and Nebraska Health and Human Services System requirements.

PART 6 - VALVES NOT REMOVED

- 6.1 All valves within the project area shall be surveyed, I.D. tagged, photographed, and tabulated/cataloged; whether replaced or not.

PART 7 - BRANCH VALVES

- 7.1 Hydrant branch valves shall be installed for all new fire hydrants.
- 7.2 Branch valves shall be cataloged by number in the prescribed tabular format.
- 7.3 Hydrant branch valves shall be numbered with the same I.D. number as the associated fire hydrant followed by "FHV".
- 7.4 Hydrant branch valve coordinates and elevation, burial depth, type, and manufacturer shall also be tabulated by the Contractor in the prescribed tabular format, as well as tabulation of the photograph number in which the valve appears (from the fire hydrant photograph).
- 7.5 Surface cover and other items as shown in the tables shall be included.

PART 8 - CATHODIC PROTECTION SYSTEMS

- 8.1 Each valve, hydrant and branch valve shall be protected from corrosion by a sacrificial anode type system.
- 8.2 The Contractor shall tabulate the depth of the C.P. anodes; photograph no.; test station northing, easting, and elevation; test station manufacturer and model no; and test station finish grade condition ie concrete, grass, other.

PART 9 - UNIT PRICES FOR CONTRACT ADJUSTMENT

- 9.1 Bids for the work shall be on a lump sum basis for the entire project. However, bidders shall provide unit prices with their bid for the purpose of change order adjustment to the contract for the following items. The unit prices shall include all appurtenances and incidental work required to complete the construction and will be used by the Government to address unforeseen or changed field conditions.

A.	Furnish and Install Fire Hydrant	EA
B.	Furnish and Install Post Indicator	EA
C.	Furnish and Install 6" Valve	EA
D.	Furnish and Install 8" Valve	EA
E.	Furnish and Install 10" Valve	EA
F.	Furnish and Install 12" Valve	EA
G.	Furnish and Install 16" Valve	EA
H.	Furnish and Install 6" Water Piping.....	LF
I.	Furnish and Install 8" Water Piping.....	LF
J.	Furnish and Install 10" Water Piping.....	LF
K.	Furnish and Install 12" Water Piping.....	LF
L.	Furnish and Install 16" Water Piping.....	LF
M.	Remove 8" Concrete Pavement and 4" Base	SY
N.	Remove 6" Asphalt Pavement and 8" Base	SY
O.	Remove 4" Sidewalk	SY
P.	Furnish and Install 9" Concrete Pavement and 4" Base	SY
Q.	Furnish and Install 7" Asphalt Pavement and 8" Base	SY
R.	Furnish and Install 4" Sidewalk	SY
S.	Furnish and Finish Grade and Sodding.....	SY
T.	Furnish and Install 32 pound magnesium anode and test station.....	EA
U.	Paint Fire Hydrant – Above Grade Only	EA
V.	Line Additional Water Main - 6"	LF

W.	Line Additional Water Main - 8"	LF
X.	Line Additional Water Main - 10"	LF
Y.	Line Additional Water Main - 12"	LF
Z.	Line Additional Water Main - 16"	LF
AA.	On-Site Excavation Backfill and Compaction	CY
BB.	Install Contractor Supplied Borrow Soil and Compaction	CY
CC.	Install Additional Trench Bottom Stabilization Material	TN

9.2 The unit price bids shall be included with each bidders lump sum bid for the project.

PART 10 – TESTING

The Contractor will engage a qualified independent testing and inspecting firm to perform field tests and inspections and to prepare test reports. At a minimum the independent firm shall complete the following items. If more stringent requirements are specified in the individual specification sections, the more stringent requirement shall be met.

10.1 During periods when testing, sampling and inspection are required, generate daily and weekly reports of all testing, sampling and inspections and provide originals to the government representative on the project.

10.2. Soil:

- a. Develop proctor moisture density curves for each type of soil to be compacted on the project.
- b. Assure minimum soil compaction to be 95% of the maximum proctor density, unless specified otherwise. Reference to percent maximum density shall mean a soil density not less than the stated percent of maximum density for soil, as determined by ASTM D 698.
- c. Accomplish soil density testing at rate of no less than one test per every 7000 square feet. Accomplish soil density testing at each work location where existing pavement is removed (open hole) in each lift disturbed and in each soil type present.
- d. Determine suitability for the re-use of soils encountered on the project.
- e. Observe final subgrade conditions for new pavement and advise as to the suitability of the subgrade for pavement support.
- f. Observe the accomplishment of subgrade scarification and recompaction at each location where the existing pavement is removed.

10.3 Portland Cement Concrete:

- a. Provide testing to determine concrete entrained air content, temperature and slump. Make 6" by 12" cylinder sets (four cylinders per set) and test for compressive strength.

The concrete testing shall be accomplished once in the first 25 cubic yards of each pour and then again for each additional 50 cubic yards but not less than twice for pours over 25 cubic yards. Accomplish concrete testing only once on pours less than 25 cubic yards. No testing required on pours less than 5 cubic yards.

- b. Provide on site quality assurance for compliance with requirements equal to those of Nebraska Department of Roads 47B PC concrete mix except as otherwise specified in the construction documents.

10.4 Asphaltic Concrete:

- a. Provide on site quality assurance for compliance with requirements equal to those of the City of Omaha CMC asphaltic concrete mix except as otherwise specified in the construction documents.
- b. Sample each asphalt cement concrete mix types and test to determine the theoretical maximum density.
- c. Test asphaltic concrete on site at least 4 times daily during the first five working days of asphaltic concrete paving operations to verify compaction. After the first five working days reduce the frequency to 2 times daily. If asphalt paving operations are suspended for more than 14 days, then when asphalt paving operations resume, the testing frequency requirement of at least 4 times daily for five working days is to again become effective.
- d. Ensure that the final asphaltic concrete density in place is between 92% and 96% of the maximum theoretical density.
- e. Verify that the rolling pattern will provide adequate compaction for the asphaltic concrete.
- f. Drill one core sample per 20,000 square feet of pavement. Determine the density and thickness of the cores.

10.5 Water Main Lining:

- a. Provide field quality control test reports for water main lining.

END OF SECTION